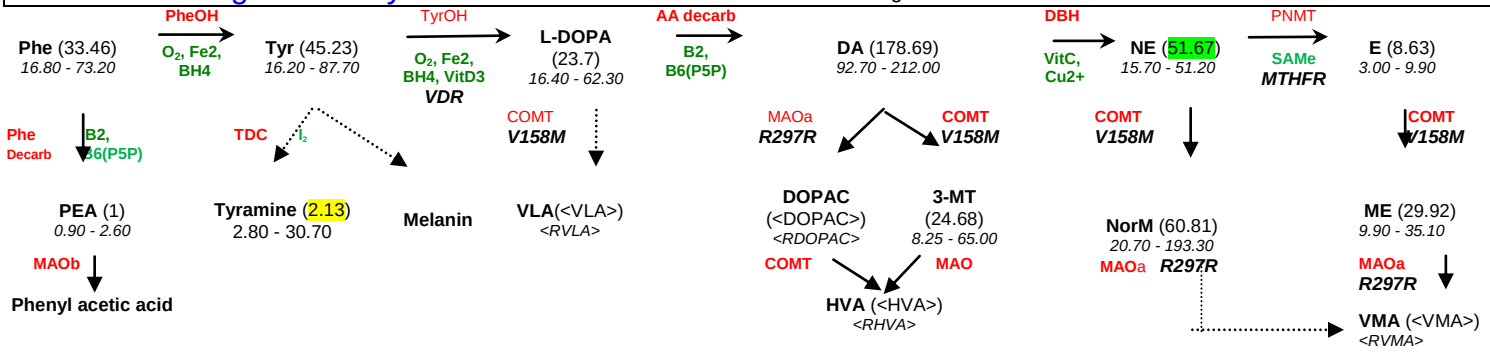
SABRE SCIENCES Metabonomic HPA Profile / Norvelle Harris MD FCAP / Medical Director

The following information is not intended as medical or any other health care advice, diagnosis or treatment. The services, including the information below, are for informational purposes only and are not a substitute for professional medical advice, examination, diagnosis or treatment. No Sabre sciences information, including information about herbal therapies and other dietary supplements, is regulated or evaluated by the Food and Drug Administration and therefore the information should not be used to diagnose, treat, cure or prevent any disease. Use of this information in treatment should be subject to verification by FDA approved diagnostics.

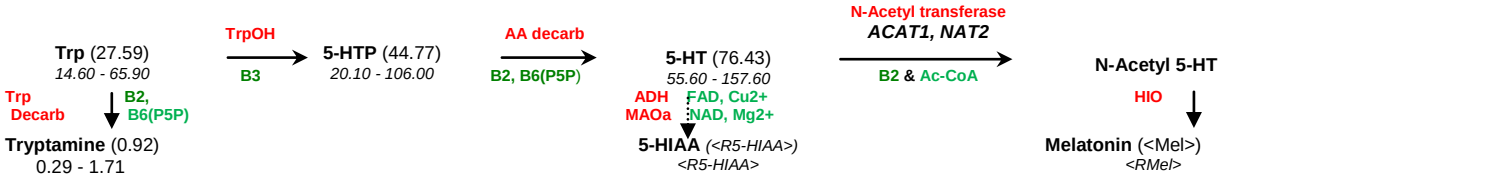
DOB:7/17/1976 Age: 41 Height:5'5" Wt:135 Date Printed:4/30/2018

Name	Practitioner	Lab#	Date Reported
Jane Doe Sample	Sample Doctor	23210-P	4/12/2018

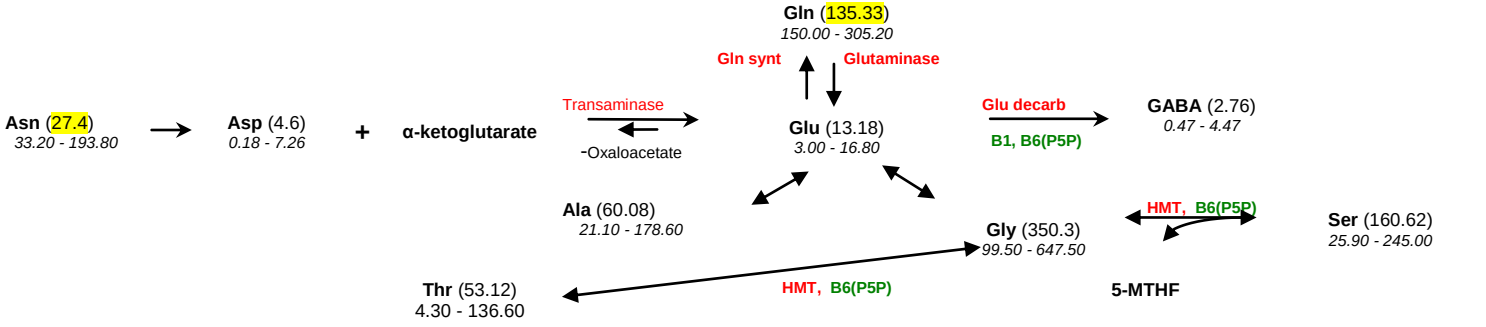
Catecholaminergic Pathways & Metabolites: NE:E Ratio 5.99 Range 2.69 - 9.12



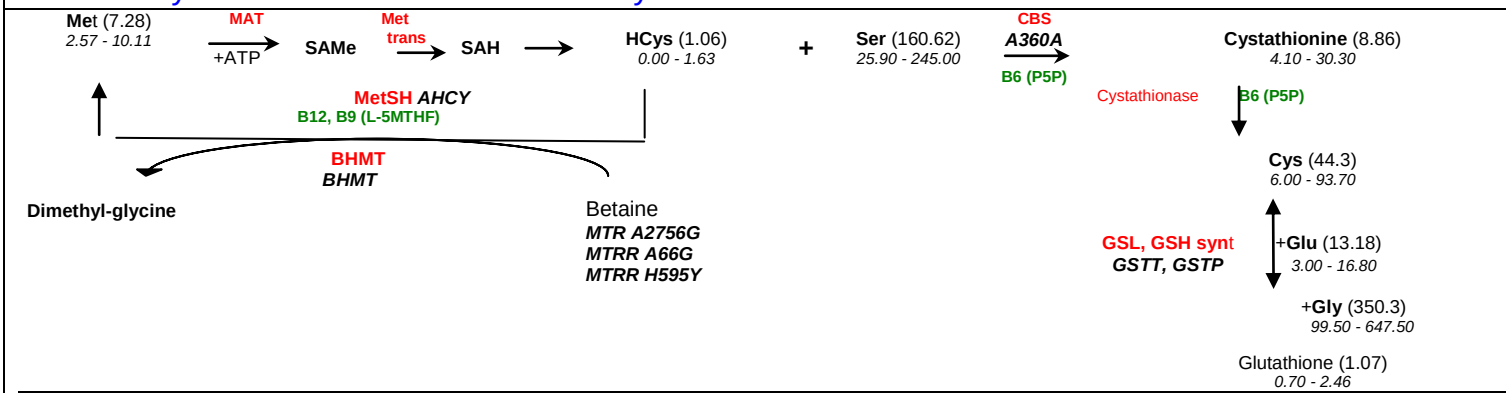
Serotonergic Pathways & Metabolites: 5-HT:DA Ratio 0.43 Range 0.49 - 1.67



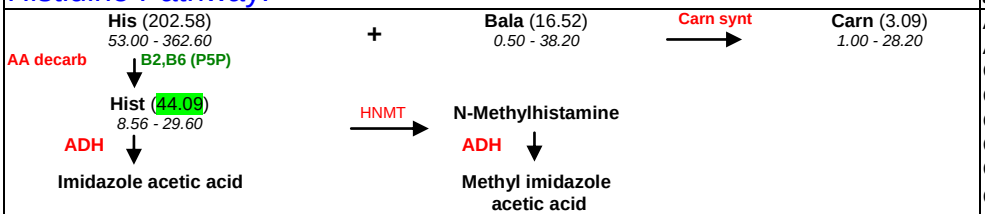
Glutamatergic Pathways:



Trans-Methylation/Trans-Sulfuration Pathways:



Histidine Pathway:



Other CYP 450 Mutations Affecting Detoxification and Drug, Steroid & other Lipid Metabolism

ACAT1 (acetylation, protein, lipid & fat metabolism)
AHCY (met metabolism, macro molecular metabolism)
CYP 1A1 (lipids, estrogens & drugs)
CYP 1A2
CYP 1B1 & L432V (chol, steroids)
CYP 1B1 & R48G (chol, steroids)
CYP2A6
CYP 2C9 & 2C19 (drugs, xenobiotics, diazepams, chol, steroids & other lipids))
CYP 2D6 S486T
CYP 2D6 100C>T
CYP 2D6 2850C>T
CYP 3A4 & 3A5
SOD A16V

SABRE SCIENCES
"Live Better thru Science"
2233 Faraday Avenue Suite K Carlsbad, CA 92008
Telephone (760) 448-2750 ♦ Toll Free 888-490-7300 ♦ info@sabresciences.com

Name:	Jane Doe Sample	**Protocol ID:**	23210	**Practitioner:**	Sample Doctor
Retest:	HPA-4 in 3 months	**CS:**	AL	**Date:**	April 20, 2018

HPA-4 Laboratory Findings Review

All STRESS, whether emotional or physical, initiates a wide array of behavioral and physiological responses within the Autonomic Nervous System (ANS) that affects equilibrium (homeostasis). A controlled adaptive response allows one to regain homeostasis and balance. An uncontrolled maladaptive response induces reactions that cause abnormalities in the body's 5 Principal Regulatory Systems such as the:

• Hypothalamic-Pituitary-Adrenocortical Axis (HPA) System • Catecholaminergic system
• Cholinergic and Serotonergic NT Systems • Immune and reproductive system • Inflammatory System

Sabre's HPA-4 Metabonomic Profile™ examines the aforementioned 5 systems and combines the information into a detailed, Adrenal Progression Status and Metabolic Activity (ANS) Report. This report helps determine the Adrenal and ANS functionality; and, the body's enzyme co-factor activity, resulting in a targeted supplementation regimen with the dosing required to balance the individual's metabolism and regain homeostasis.

Your Adrenal Findings: (All ranges are Sex & Age Related and are the Free Fraction [bioavailable])

Sex hormone levels are not the key to health, your Adrenal Status and the overall balance in the hormone ratios are.
Changes to key hormone ratios in Cortisol, DHEAS, P, E2 & T have a direct effect on physical and mental well-being.

Female: Your sex hormone balance (Follicular): P:E2=29.84 Normal (NR: 28-35);
Ratios are balanced / unbalanced.

Your Cortisol Dynamics (levels, pattern & fluctuations) are:
Your DHEAS Dynamics (levels, pattern & fluctuations) are: **Erratic w/ marked fluctuations and markedly elevated midnight inversion**

These findings are consistent with: marked sympathetic arousal status.

Your Autonomic Nervous System (ANS) Findings:

The autonomic nervous system has 2 main divisions: the sympathetic and parasympathetic nervous system, It regulates bodily functions such as the heart rate, digestion, respiratory rate, pupillary response, urination, HPA mineral corticoids, glucocorticoids, sex hormones and sexual arousal. and sexual arousal. This system is the primary mechanism in control of the fight-or-flight response. Overall, the two divisions work together to ensure that the body responds appropriately to different situations.

1. Your Adrenal response is excitatory.
2. P:E2 Ratio is normal.
4. Your Catecholaminergic Response is excitatory. Stop B Vitamins and any methylation support (L-5 and SAMe).
6. Your serotonin/ dopamine ratio is low.
7. Your glutamate is normal.
8. Your methionine is low normal.
9. Your cystathionine is low normal.
10. Your Histamine elevated.

Your Metabolic Findings:

1. Your metabolic response is: **excitatory.**

2. Cysteine/ Cystine ratio: 1.45 H (NR= 0.65– 1.35) indicates increased oxidative stress.
3. Homocysteine/ Homocystine Ratio is Normal.

Free radicals inactivate B12 (methylcobalamin), affecting its utilization. This slows the methylation cycle. Sulfur metabolites are then dumped into the transsulfuration pathway (which is connected to the methylation cycle); are oxidized to form cystine (L-cys2), are eventually converted to thiosulfate and sulfate and are excreted in the urine. This lowers the production of GSH, which requires cysteine rather than cystine and the vicious circle mechanism, that promotes this methylation malfunction, keeps you chronically ill.

Supplementing with GSH, correcting the methylation and transsulfuration pathways by adding Sabre's Targeted B Complex™ supplementation (B2, B6 P5P, Methyl B12 and Hydroxy B12) are imperative to recovery and long term health. Helping the methionine synthase enzyme production, so that the partial block in the methylation cycle, transsmethylation and the folate cycle are lifted; and, normalizing glutathione is the intent of Sabre's Targeted Protocol.

4. Your elevated histamine may indicate proinflammatory system response activation.

The nootropic Effinex - an Ubiquinol Analog, is a fat-soluble analog of the anti-oxidant ubiquinone (aka CoQ10). Beyond Effinex's antioxidant and anti-inflammatory activity, Effinex may be an effective support for heart and mitochondrial metabolic dysfunctions. In cellular and tissue models, Effinex acts as a transporter in the electron transport chain of mitochondria and thus increases the production of ATP.
In cellular and tissue models, Effinex acts as a transporter in the electron transport chain of mitochondria and thus increases the production of adenosine triphosphate (ATP).

Effinex is used by medical professionals for Alzheimer's disease, liver disease, heart disease; as well as a number of inherited disorders including Leber's disease (an eye condition), mitochondrial encephalomyopathies (nerve and muscle disorders), and Friedreich's ataxia (a nervous system disorder that worsens over time, eventually leading toward heart disease and diabetes). Early anecdotal data suggests Effinex may be an effective support for urgency in males. Further investigation is planned.

5. Your catecholamines: Neurotransmitters (NT's) must be metabolized (broken down) in order to prevent an excitatory response. This allows new signal production from adjacent nerves and keeps the brain "in balance". Monoamine oxidases (MAO) are a family of enzymes that catalyzes the oxidation of mono-amines (metabolizes monoamines), including dopamine, nor adrenaline, and serotonin. If MAO activity is altered, either due to stress, genetics or toxins, NT's accumulate and become imbalanced. NT imbalances have been connected to the cause of many neurological diseases.

The Cholinergic and the Dopaminergic Systems

Sabre's protocols strategically combine active natural ingredients to positively affect metabolism. In these two pathways we combine the pre-cursor amino acids, **Alpha Glycerophosphocholine**, **riboflavin B2-5-phosphate, B6 (P5P)** for catecholamine synthesis and **Serene IC** for activation of monoamine transporters and bringing the metabolic process to completion (cellular detoxification).

α-GPC rapidly delivers choline to the brain across the blood–brain barrier and is a biosynthetic precursor of acetylcholine.

Alpha Glycerophosphocholine (α-GPC) rapidly delivers choline to the brain across the blood–brain barrier and is a biosynthetic precursor of acetylcholine.

α-GPC for Brain Support: Choline is a dietary component essential for normal function of all cells. In 1998 the National Academy of Sciences, USA, issued a report identifying choline as a required nutrient for humans and recommended daily intake amounts. In ongoing studies we are finding that men have a higher requirement than do postmenopausal women, who in turn need more than premenopausal women. Pregnancy and lactation are periods when maternal reserves of choline are depleted. At the same time, the availability of choline for normal development of brain is critical. J Am Coll Nutr. 2000 Oct;19(5 Suppl):528S-531S.

Choline and its metabolites are needed for three main physiological purposes: structural integrity and signaling roles for cell membranes, cholinergic neurotransmission (acetylcholine synthesis), and a major source for methyl groups via its metabolite, trimethylglycine (betaine), which participates in the S-adenosylmethionine (SAMe) synthesis pathways (De Jesus Moreno M1. Clin Ther. 2003 Jan; 25(1):178-93.)

Choline deficiency may play a role in liver disease, atherosclerosis, and possibly neurological disorders [da Costa KA."Choline: an essential nutrient for public health". Nutrition Reviews. 67 (11/2009): 615–23].

Note: Sabre's Protocols are formulated utilizing the *Scientific Method.* These steps include, Patient History, Metabonomic HPA-4 (which studies the end products of its gene expression); and when available, identifying polymorphisms (SNPS) and determining their effect on the metabolic pathways. These data allows for *targeted intervention* with superior, beneficial, long lasting results.

Conclusion: Your metabolic response is excitatory and consistent with increased Autonomic Nervous System Activity.

Corrective Action:

Stop current Day Crème and methylation support (L-5 MTHF, SAMe).

Protocol List and Products

Digestive: HLC Mindlinx

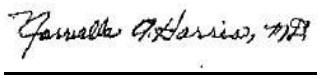
Adrenal / Hormonal: Day Crème w/ pregnenolone, progesterone, DIM and GABA/ phenibut.

2nd Day Crème: α-GPC Transdermal crème.

Metabolic: Targeted B Complex (without L-5).

Moods: Calming Crème.

Sleep: PM Crème e/ phenibut, melatonin.

Retest: HPA-4 in 3 Months.

Metabonomic HPA Evaluation
Norvelle Harris, MD, FCAP, Medical Director